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09/820,817	03/30/2001	John Vicente	P 275020 P10433	4487

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EXAMINER

NGUYEN, HAI V

ART UNIT	PAPER NUMBER
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2142

DATE MAILED: 07/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/820,817

Applicant(s)

VICENTE ET AL.

Examiner

Hai V. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to *the application* communication(s) filed on 30 March 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-29 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

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### DETAILED ACTION

1. This Office Action is in response to the communication filed on 30 March 2001.
2. Claims 1-29 are presented for examination.

#### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-29 are rejected under 35 U.S.C. 102(e) as being anticipated by

**Natarajan et al. US patent no. 6,505,244 B1.**

5. As to claim 1, Natarajan teaches substantially the invention as claimed, including a system for host-based QoS provisioning, comprising:

a host system connecting to a network, said host system initiating data flows that are sent to said network (*Abstract, Fig. 2; col. 2, line 15 – col. 3, line 42*); and

a centralized QoS provisioning mechanism for enforcing flow control applied on said data flows originated from said host system, said centralized QoS provisioning mechanism connecting to said host system (*Abstract, Fig. 2; col. 2, line 15 – col. 3, line 42*).

6. As to claim 2, Natarajan teaches, wherein said host system comprises:

a server (*Fig. 2, item 214; Fig.3, item 314; Fig. 4, item 414*); and

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at least one client (*Fig. 2, item 202; Fig.3, item 302; Fig. 4, item 404*) capable of communicating with said server.

7. As to claim 3, Natarajan teaches, wherein said centralized QoS provisioning mechanism comprises:

at least one network traffic control agent that are responsible for enforcing said flow control, each of said at least one network traffic control agent running on one of said at least one client, imposing said flow control on data flows initiated by applications running on said one of said at least one client (*col. 8, lines 20-38*);

a network traffic control administrator (*Fig. 2, item 260; Fig.3, item 360; Fig. 4, item 460*), running on said server, for conducting centralized QoS provisioning and for performing said centralized QoS provisioning by enforcing flow control via said at least one network traffic control agent; and

a policy server (*Fig. 2, item 254; Fig.3, item 354; Fig. 4, item 454*) for storing said QoS provisioning policy.

8. As to claim 4, Natarajan teaches, a console (*col. 5, line 54 – col. 6, line 7*) for performing user-level QoS provisioning; and a network performance statistics collector (*Fig. 2, item 270*) for collecting network performance statistics from said host system, said network performance statistics being utilized by said network traffic control administrator to perform automatic feedback-driven QoS provisioning policy adaptation (*col. 7, line 12 - col. 8, line 20*).

9. As to claim 5, Natarajan teaches a system for a network traffic control agent, comprising: a communication unit for interacting with a network traffic control

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administrator wherein said network traffic control administrator is running on a server in a host system comprising; said server and at least one client (*col. 8, lines 20-38; col. 13, lines 30-58*);

a filtering unit (*event handler*) for filtering an application based on a filter received from said network traffic control administrator via said communication unit, said application running on one of said at least one client in said host system, said network traffic control agent running on said one of said at least one client (*col. 8, lines 20-38; col. 13, lines 30-58*); and

a flow control enforcement unit (*event handler*) for enforcing flow control on data flows generated by said application according to a flow specification received from said network traffic control administrator via said communication unit (*col. 8, lines 20-38; col. 13, lines 30-58*).

10. As to claim 6, Natarajan teaches a storage (*Fig. 2, item 252*) for storing said flow specification received from said network traffic control administrator; and a flow monitoring unit (*Fig. 2, item 262*) for collecting per flow information from said data flows of said application and sending said per flow information to said network traffic control administrator via said communication unit.

11. As to claim 7, Natarajan teaches a system for a network traffic control administrator, comprising:

a communication unit (*Fig. 2, item 260*) for communicating with at least one network traffic control agent;

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a per-flow usage analysis unit (*Fig. 2, item 254*) for analyzing per-flow information collected by said at least one network traffic control agent and received via said communication unit, to generate peer-flow usage statistics;

a local network usage information analysis unit (*Fig. 2, item 254*) for analyzing the network performance statistics to generate local network usage statistics;

a QoS provisioning unit (*Fig. 2, item 254*) for conducting centralized QoS provisioning to generate QoS provisioning policy and for updating said QoS provisioning policy based on said per-flow usage statistics and said local network usage statistics; and

a flow control instruction unit for constructing a filter and a flow specification based on said QoS provisioning policy, said filter and said flow specification being sent, via said communication unit, to said at least one network traffic control agent to enforce flow control; and

a QoS provisioning policy (*Fig. 2, item 254*) updating unit for updating QoS provisioning policies.

12. As to claim 8, Natarajan teaches, wherein said QoS provisioning policy updating unit comprises:

a manual user-driven updating unit for performing manual update of said QoS provisioning policy to generate updated QoS policy (*col. 32, line 12 – col. 33, line 56*);

an automatic feedback-driven adaptation unit for dynamically adjusting said QoS provisioning policy based on said local network usage statistics and said per-flow usage statistics to generate updated QoS policy (*col. 29, line 59 – col. 30, line 43; col. 32, line 12 – col. 33, line 56*); and

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a flow control instruction unit for constructing updated flow specifications 5 based on said updated QoS policy (*col. 29, line 59 – col. 30, line 43; col. 32, line 12 – col. 33, line 56*).

13. As to claim 9, Natarajan teaches a method for host-based QoS provisioning, comprising: performing, by a network traffic control administrator, centralized QoS provisioning for an application to generate QoS provisioning policy, stored on a policy server, said application running in a host system (*col. 28, line 39 – col. 29, line 36; col. 32, line 12 – col. 33, line 56*);

constructing, by said network traffic control administrator, a filter and a flow specification according to said QoS provisioning policy, said filter and said flow specification being used to enforce flow control on data flows initiated from said application (*col. 28, line 39 – col. 29, line 36; col. 32, line 12 – col. 33, line 56*);

sending said filter and said flow specification to a network traffic control agent (*col. 14, line 20 – col. 15, line 18; col. 28, line 39 – col. 29, line 36; col. 32, line 12 – col. 33, line 56*);

receiving, by said network traffic control agent, said filter and said flow specification (*col. 8, lines 20-38; col. 13, line 45 – col. 14, line 19; col. 14, line 20 – col. 15, line 18; col. 28, line 39 – col. 29, line 36; col. 32, line 12 – col. 33, line 56*);

filtering, by said network traffic control agent, said application using said filter (*col. 8, lines 20-38; col. 13, line 45 – col. 14, line 19; col. 14, line 20 – col. 15, line 18; col. 28, line 39 – col. 29, line 36; col. 32, line 12 – col. 33, line 56*); and

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enforcing said flow control based on said flow specification, on said data flows of said application (*col. 8, lines 20-38; col. 13, line 45 – col. 14, line 19; col. 14, line 20 – col. 15, line 18; col. 28, line 39 – col. 29, line 36; col. 32, line 12 – col. 33, line 56*).

14. As to claim 10, Natarajan teaches, further comprising:

activating, by said network traffic control administrator, a QoS provisioning policy updating unit (*col. 8, lines 20-38; col. 13, line 45 – col. 14, line 19; col. 14, line 20 – col. 15, line 18; col. 28, line 39 – col. 29, line 36; col. 32, line 12 – col. 33, line 56*);

examining statistics relevant to the operational status of said host system (*col. 8, lines 20-38; col. 13, line 45 – col. 14, line 19; col. 14, line 20 – col. 15, line 18; col. 28, line 39 – col. 29, line 36; col. 32, line 12 – col. 33, line 56*);

generating an updated QoS provisioning policy based on said statistics, said updated QoS provisioning policy being stored in said policy server (*col. 8, lines 20-38; col. 13, line 45 – col. 14, line 19; col. 14, line 20 – col. 15, line 18; col. 28, line 39 – col. 29, line 36; col. 32, line 12 – col. 33, line 56*);

constructing an updated flow specification according to said updated QoS provisioning policy (*col. 8, lines 20-38; col. 13, line 45 – col. 14, line 19; col. 14, line 20 – col. 15, line 18; col. 28, line 39 – col. 29, line 36; col. 32, line 12 – col. 33, line 56*); and

sending said updated flow specification to said network traffic control agent (*col. 8, lines 20-38; col. 13, line 45 – col. 14, line 19; col. 14, line 20 – col. 15, line 18; col. 28, line 39 – col. 29, line 36; col. 32, line 12 – col. 33, line 56*).

15. As to claim 11, Natarajan teaches, wherein said statistics includes at least one of per-flow usage statistics derived based on per flow information collected by at least one



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network traffic control agent (*col. 8, lines 20-38; col. 13, line 45 – col. 14, line 19; col. 14, line 20 – col. 15, line 18; col. 28, line 39 – col. 29, line 36; col. 32, line 12 – col. 33, line 56*); and

local network usage statistics derived based on network performance statistics collected by a network performance statistics collector (*col. 8, lines 20-38; col. 13, line 45 – col. 14, line 19; col. 14, line 20 – col. 15, line 18; col. 28, line 39 – col. 29, line 36; col. 32, line 12 – col. 33, line 56*).

16. As to claim 12, Natarajan teaches a method for a network traffic control agent, comprising:

receiving a filter and a flow specification from a network traffic control administrator, said filter and said flow specification being associated with an application (*col. 8, lines 20-38; col. 13, line 45 – col. 14, line 19; col. 14, line 20 – col. 15, line 18; col. 28, line 39 – col. 29, line 36; col. 32, line 12 – col. 33, line 56*);

filtering said application running on a client on which said network traffic control agent resides, said application initiating data flows (*col. 8, lines 20-38; col. 13, line 45 – col. 14, line 19; col. 14, line 20 – col. 15, line 18; col. 28, line 39 – col. 29, line 36; col. 32, line 12 – col. 33, line 56*);

retrieving a flow specification associated with said application (*col. 8, lines 20-38; col. 13, line 45 – col. 14, line 19; col. 14, line 20 – col. 15, line 18; col. 28, line 39 – col. 29, line 36; col. 32, line 12 – col. 33, line 56*); and

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enforcing flow control on said data flows based on said flow specification (*col. 8, lines 20-38; col. 13, line 45 – col. 14, line 19; col. 14, line 20 – col. 15, line 18; col. 28, line 39 – col. 29, line 36; col. 32, line 12 – col. 33, line 56*).

17. As to claim 13, Natarajan teaches, further comprising:

receiving information collection instruction from said network traffic control administrator (*col. 8, lines 20-38; col. 13, line 45 – col. 14, line 19; col. 14, line 20 – col. 15, line 18; col. 28, line 39 – col. 29, line 36; col. 32, line 12 – col. 33, line 56*);

monitoring said data flows initiated from said application to collect per flow information specified in said information collection instruction (*col. 8, lines 20-38; col. 13, line 45 – col. 14, line 19; col. 14, line 20 – col. 15, line 18; col. 28, line 39 – col. 29, line 36; col. 32, line 12 – col. 33, line 56*); and

sending said per-flow information to said network traffic control administrator (*col. 8, lines 20-38; col. 13, line 45 – col. 14, line 19; col. 14, line 20 – col. 15, line 18; col. 28, line 39 – col. 29, line 36; col. 32, line 12 – col. 33, line 56*).

18. As to claim 14, Natarajan teaches a method for a network traffic control administrator, comprising:

receiving a request for centralized QoS provisioning associated with an application, said application being installed on a client where a network traffic control agent resides (*col. 8, lines 20-38; col. 13, line 45 – col. 14, line 19; col. 14, line 20 – col. 15, line 18; col. 28, line 39 – col. 29, line 36; col. 29, line 59 – col. 31, line 57; col. 32, line 12 – col. 33, line 56*);

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receiving a user-level provisioning specification corresponding to QoS provisioning policy associated with said application (*col. 8, lines 20-38; col. 13, line 45 – col. 14, line 19; col. 14, line 20 – col. 15, line 18; col. 28, line 39 – col. 29, line 36; col. 29, line 59 – col. 31, line 57; col. 32, line 12 – col. 33, line 56*); and

storing said QoS provisioning policy associated with said application in a policy server (*col. 8, lines 20-38; col. 13, line 45 – col. 14, line 19; col. 14, line 20 – col. 15, line 18; col. 28, line 39 – col. 29, line 36; col. 32, line 12 – col. 33, line 56*);

constructing a filter associated with said application (*col. 8, lines 20-38; col. 13, line 45 – col. 14, line 19; col. 14, line 20 – col. 15, line 18; col. 28, line 39 – col. 29, line 36; col. 29, line 59 – col. 31, line 57; col. 32, line 12 – col. 33, line 56*);

constructing a flow specification corresponding to said QoS provisioning policy associated with said application (*col. 8, lines 20-38; col. 13, line 45 – col. 14, line 19; col. 14, line 20 – col. 15, line 18; col. 28, line 39 – col. 29, line 36; col. 29, line 59 – col. 31, line 57; col. 32, line 12 – col. 33, line 56*); and

sending said filter and said flow specification to said network traffic control agent (*col. 8, lines 20-38; col. 13, line 45 – col. 14, line 19; col. 14, line 20 – col. 15, line 18; col. 28, line 39 – col. 29, line 36; col. 29, line 59 – col. 31, line 57; col. 32, line 12 – col. 33, line 56*).

19. As to claim 15, Natarajan teaches, further comprising:

receiving per-flow information from at least one network traffic control agent (*col. 8, lines 20-38; col. 13, line 45 – col. 14, line 19; col. 14, line 20 – col. 15, line 18; col. 28,*

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*line 39 – col. 29, line 36; col. 29, line 59 – col. 31, line 57; col. 32, line 12 – col. 33, line 56).*;

generating per-flow usage statistics by analyzing said per-flow information received from said at least one network traffic control agent (*col. 8, lines 20-38; col. 13, line 45 – col. 14, line 19; col. 14, line 20 – col. 15, line 18; col. 28, line 39 – col. 29, line 36; col. 29, line 59 – col. 31, line 57; col. 32, line 12 – col. 33, line 56).*);

receiving network performance statistics from a network performance statistics collector (*col. 8, lines 20-38; col. 13, line 45 – col. 14, line 19; col. 14, line 20 – col. 15, line 18; col. 28, line 39 – col. 29, line 36; col. 29, line 59 – col. 31, line 57; col. 32, line 12 – col. 33, line 56).*; and

generating local network usage statistics by analyzing said network performance statistics received from said network performance statistics collector (*col. 8, lines 20-38; col. 13, line 45 – col. 14, line 19; col. 14, line 20 – col. 15, line 18; col. 28, line 39 – col. 29, line 36; col. 29, line 59 – col. 31, line 57; col. 32, line 12 – col. 33, line 56).*

20. As to claim 16, Natarajan teaches, further comprising updating QoS provisioning policy (*col. 8, lines 20-38; col. 13, line 45 – col. 14, line 19; col. 14, line 20 – col. 15, line 18; col. 28, line 39 – col. 29, line 36; col. 29, line 59 – col. 31, line 57; col. 32, line 12 – col. 33, line 56).*

21. As to claim 17, Natarajan teaches, wherein said updating comprises:

determining whether said updating is to be performed in manual user driven mode or in automatic feedback-driven mode (*col. 8, lines 20-38; col. 13, line 45 – col.*

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14, line 19; col. 14, line 20 – col. 15, line 18; col. 28, line 39 – col. 29, line 36; col. 29, line 59 – col. 31, line 57; col. 32, line 12 – col. 33, line 56);

performing manual user-driven QoS provisioning policy updating if said updating is to be performed in said manual user-driven mode, determined by said determining (col. 8, lines 20-38; col. 13, line 45 – col. 14, line 19; col. 14, line 20 – col. 15, line 18; col. 28, line 39 – col. 29, line 36; col. 29, line 59 – col. 31, line 57; col. 32, line 12 – col. 33, line 56); and

performing automatic feedback-driven QoS provisioning policy adaptation if said updating is to be performed in said automatic feedback-driven mode, determined by said determining (col. 8, lines 20-38; col. 13, line 45 – col. 14, line 19; col. 14, line 20 – col. 15, line 18; col. 28, line 39 – col. 29, line 36; col. 29, line 59 – col. 31, line 57; col. 32, line 12 – col. 33, line 56).

22. As to claim 18, Natarajan teaches, wherein said performing manual user-driven QoS provisioning policy updating comprises:

examining said per-flow usage statistics and said local network usage statistics (col. 8, lines 20-38; col. 13, line 45 – col. 14, line 19; col. 14, line 20 – col. 15, line 18; col. 28, line 39 – col. 29, line 36; col. 29, line 59 – col. 31, line 57; col. 32, line 12 – col. 33, line 56);

determining policy update measures based on said per-flow usage statistics and said local network usage statistics (col. 8, lines 20-38; col. 13, line 45 – col. 14, line 19; col. 14, line 20 – col. 15, line 18; col. 28, line 39 – col. 29, line 36; col. 29, line 59 – col. 31, line 57; col. 32, line 12 – col. 33, line 56); and

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revising said QoS provisioning policy stored in said policy server according to said policy update measures (*col. 8, lines 20-38; col. 13, line 45 – col. 14, line 19; col. 14, line 20 – col. 15, line 18; col. 28, line 39 – col. 29, line 36; col. 29, line 59 – col. 31, line 57; col. 32, line 12 – col. 33, line 56*).

23. As to claim 19, Natarajan teaches, wherein said performing automatic feedback-driven QoS provisioning policy adaptation comprises:

forking into a plurality of cycles, said automatic feedback-driven QoS provisioning adaptation is performed in each of said plurality of cycles based on a different cycle length (*col. 8, lines 20-38; col. 13, line 45 – col. 14, line 19; col. 14, line 20 – col. 15, line 18; col. 28, line 39 – col. 29, line 36; col. 29, line 59 – col. 31, line 57; col. 32, line 12 – col. 33, line 56*);

examining, in each of said plurality of cycles, said per flow usage statistics and said local network usage statistics (*col. 8, lines 20-38; col. 13, line 45 – col. 14, line 19; col. 14, line 20 – col. 15, line 18; col. 28, line 39 – col. 29, line 36; col. 29, line 59 – col. 31, line 57; col. 32, line 12 – col. 33, line 56*);

computing automatically, in each of said plurality of cycles, adaptation measures to be applied to said QoS provisioning policy based on said per flow usage statistics and said local network usage statistics (*col. 8, lines 20-38; col. 13, line 45 – col. 14, line 19; col. 14, line 20 – col. 15, line 18; col. 28, line 39 – col. 29, line 36; col. 29, line 59 – col. 31, line 57; col. 32, line 12 – col. 33, line 56*);

revising, in each of said plurality of cycles, said QoS provisioning policy stored in said policy server according to said adaptation measures (*col. 8, lines 20-38; col. 13, line 45*

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– col. 14, line 19; col. 14, line 20 – col. 15, line 18; col. 28, line 39 – col. 29, line 36; col. 29, line 59 – col. 31, line 57; col. 32, line 12 – col. 33, line 56).

24. Claim 20 is corresponding computer readable medium claim of claim 9; therefore, it is rejected under the same rationale as in claim 9.

25. Claim 21 is similar limitations of claim 10; therefore, they are rejected under the same rationale as in claim 10.

26. Claim 22 is corresponding computer readable medium claim of claim 12; therefore, it is rejected under the same rationale as in claim 12.

27. Claim 23 is similar limitations of claim 13; therefore, it is rejected under the same rationale as in claim 13.

28. Claim 24 is corresponding computer readable medium claim of claim 14; therefore, it is rejected under the same rationale as in claim 14.

29. Claims 25-29 are similar limitations of claims 15-19; therefore, they are rejected under the same rationale as in claims 15-19.

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30. Further references of interest are cited on Form PTO-892, which is an attachment to this action.

31. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hai V. Nguyen whose telephone number is 703-306-0276. The examiner can normally be reached on 6:00-3:30 Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Harvey can be reached on 703-305-9705. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Hai V. Nguyen  
Examiner  
Art Unit 2142



JACK B. HARVEY  
SUPERVISORY PATENT EXAMINER